

### **REMARKS**

With entry of this Amendment and Response, claims 1-4, 8 and 10-18 are currently pending. Claims 1, 4, 8, 10 and 14-18 are amended. The applicant has cancelled claims 5-7 and 9. Claim 8 is amended to redirect dependency from canceled claim 7 and claim 14 is amended to supply a missing period. Other amendments to the claims are supported throughout the specification and the original claims, for example, page 10, Table 1, and page 17, Example 1, as well as original claims 5-7 and 9. Claim 19 is added, with support found at page 15, lines 24-28. With these amendments no new matter is presented. In light of the foregoing amendments and the following remarks, the applicant respectfully request allowance of the pending claims.

Please note U.S. App. Serial No. 10,712,169, under common assignment with the present application, is presently pending. Assignment of 10,712,169 and the present application, 10/808,940 to a common Examiner is respectfully requested.

### **In the Specification**

Figure 1 is amended to include the feed stream. The feed stream is described at least at page 9, lines 31-32. Therefore, no new matter is presented. A replacement sheet and annotated sheet are provided.

### **35 U.S.C. §103(a)**

Claims 1-4, 8 and 10-18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Berlowitz et al. (U.S. Pat. No. 5,689,031). Applicants respectfully traverse.

In order to establish a prima facie case of obviousness, three basic criteria must be met, namely: 1) the references when combined must teach or suggest all of the claim limitations; 2) a suggestion or motivation to modify the references or combine the reference teachings must be present; and 3) the references when combined must provide a reasonable expectation of success. Applicants submit that all of these requirements have not been met.

Briefly, applicants discovered a process for the production of middle distillates that are readily biodegradable. Independent claim 1, as amended, is directed to a process for producing a readily biodegradable synthetic middle distillate by separating FT synthesis reaction products into a heavier ( $>270^{\circ}\text{C}$  ( $\sim 512^{\circ}\text{F}$ ) and lighter ( $<270^{\circ}\text{C}$  ( $\sim 512^{\circ}\text{F}$ ) fraction. The heavier fraction (note: only the heavier fraction) is catalytically processed to yield a middle distillate. The lighter

fraction is separately hydrotreated and subsequently combined with the middle distillate resulting in an improved readily biodegradable middle distillate.

There are significant differences between the claimed process and that of Berlowitz. Berlowitz separates into different fractions which results in different treatment from the process of claim 1. The Office Action admits that Berlowitz does not suggest the separation steps, fractionation or ration of components of the present claims. Furthermore Berlowitz admittedly does not suggest the catalytic processing of a separate heavier fraction. In particular, Berlowitz separates the products of the FT synthesis reaction into 700° F+ (371 °C+) and 700° F- (371 °C-) fractions, then sub-fractionates the 700° F- (371 °C-) fraction into a C4 fraction, C5 - 500° F (~C5 - 260° C) fraction, and 500 - 700° F (~260 -371° C) fraction. Next, Berlowitz combines the 700° F+ (371 °C+) and C5 - 500° F (~C5 - 260° C) fractions and subsequently hydroisomerizes them together. In contrast, claim 1 separates into a heavier fraction (>270° C (~512° F) and lighter (<270° C (~512° F) fraction of different composition and with separate catalytically processing of the heavier fraction and separate hydrotreating of the light fraction. Hence as the Office has already indicated, Berlowitz does suggest the claimed process steps.

Berlowitz also fails to present a suggestion or motivation to change the fractions it treats or how it treats and blends the various fractions. Without such guidance, the claimed process cannot be found obvious in view of Berlowitz.

Furthermore, the inventors found that the claimed process prepares a middle distillate unlike other diesel fuels in that is biodegradable. A compound is considered readily biodegradable if it reaches 60% biodegradation within 28 days under the prescribed Sturm OECD Method 301B, presented at pages 15, line 22- page 8. Biodegradability results are presented at Table 6, Chart 1 and Example 1 at pages 16-17 wherein fuel produced according to the claimed process was found to be 61% biodegraded after 28 days.

In summary, Berlowitz fails to teach or suggest all the limitations of independent claim 1, and dependent claims 2-4, 8 and 10-18. Applicants respectfully submit that claims 1-4, 8 and 10-18 are not obvious over Berlowitz et al. and request that the rejection be withdrawn.

### **Conclusion**

In light of the foregoing amendments and remarks, the applicant submits that the claims are in condition for allowance and requests advancement of the application toward issuance. The applicant also notes that there may be other arguments in support of patentability of the claims and reserves the right to raise any such argument in the future. Please call the undersigned attorney if there are any questions.

Respectfully submitted,  
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Appendix:  
Replacement Drawing Sheet for Figure 1  
Annotated Sheet for Figure 1

## **APPENDIX**

This appendix includes one replacement sheet for Figure 1 in the present application, and an annotated sheet of Figure 1 for the Examiner's consideration.